AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application.

LISTING OF CLAIMS:

1. (ORIGINAL) A process for manufacturing at least one of a pole structure and a coil structure for a magnetic head, comprising:

depositing a conductive layer;

depositing a photoresist layer on the conductive layer;

depositing a silicon dielectric layer on the photoresist layer;

masking the silicon dielectric layer;

etching at least one channel in the photoresist layer and the silicon dielectric layer; and

filling the at least one channel with a conductive material to define at least one of a coil structure, a pole tip structure or both;

wherein an aspect ratio of the at least one channel is at least about 7;

wherein a grain size of the conductive material is less than half of a smallest dimension of the at least one channel.

2. (CURRENTLY AMENDED) A process for manufacturing at least one of a pole structure and a coil structure for a magnetic head, comprising:

depositing a conductive layer;

depositing a photoresist layer on the conductive layer;

depositing a silicon dielectric layer on the photoresist layer;

masking the silicon dielectric layer;

etching at least one channel in the photoresist layer and the silicon dielectric layer; and

filling the at least one channel with a conductive material to define at least one of a coil structure and a pole tip structure,

wherein an aspect ratio of the at least one channel is at least 7.

3. (ORIGINAL) The process as recited in claim 1, wherein the conductive layer includes Cu if a coil structure is being formed.

4. (ORIGINAL) The process as recited in claim 1, wherein the conductive material includes Cu.

5. (ORIGINAL) The process as recited in claim 1, wherein the silicon dielectric layer includes SiO2.

6. (ORIGINAL) The process as recited in claim 1, wherein the etching includes reactive ion etching (RIE).

7. (ORIGINAL) The process as recited in claim 1, wherein the masking includes depositing another photoresist layer.

8. (ORIGINAL) The process as recited in claim 1, and further comprising removing the silicon dielectric layer.

9. (ORIGINAL) The process as recited in claim 1, and further comprising depositing an adhesion promoter layer between the silicon dielectric layer and the photoresist layer.

10. (ORIGINAL) The process as recited in claim 1, wherein the conductive layer includes a magnetic material.

11. (ORIGINAL) The process as recited in claim 1, wherein the conductive material includes a magnetic material.

12. (ORIGINAL) The process as recited in claim 10, wherein the magnetic material is selected from the group consisting of NiFe, CoFe, and CoNiFe.

13. (ORIGINAL) The process as recited in claim 1, wherein the coil structure includes a P2 pole tip structure.

14. (CANCEL)

15. (PREVIOUSLY PRESENTED) The process as recited in claim 2, wherein a grain size of the conductive material is less than half of a smallest dimension of the at least one channel.

16. (ORIGINAL) The process as recited in claim 15, wherein the grain size facilitates the depositing of the conductive material in the at least one channel.

17. (ORIGINAL) The process as recited in claim 1, wherein the conductive layer includes an Si-containing material.

18. (CURRENTLY AMENDED) A process for manufacturing at least one of a pole tip and a coil structure for a magnetic head, comprising:

depositing a conductive layer;

depositing a photoresist layer on the conductive layer;

depositing a silicon dielectric layer on the photoresist layer;

masking the silicon dielectric layer;

etching at least one channel in the photoresist layer and the silicon dielectric layer; and

filling the at least one channel with a conductive material to define at least one of a pole tip and a coil structure,

wherein a grain size of the conductive material is less than half of a smallest dimension of the at least one channel.

19. (ORIGINAL) The process as recited in claim 18, wherein the coil structure includes a P2 pole tip structure.

20. (CANCEL)

21. (CANCEL)

22. (CANCEL)

23. (CANCEL)

24. (CANCEL)